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DATE: Saturday, May 12, 2007

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		DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI; THES=ASSIGNEE; PLUR=YES; OP=ADJ	
☐	L8	catalyti$3 near3 partial oxid$5 same liquid hydrocarbon with (gaseous hydrocarbons or natural gas or LPG)	9
		DB=PGPB,USPT; THES=ASSIGNEE; PLUR=YES; OP=ADJ	
☐	L7	L1 and start$3 near3 temperature	0
☐	L6	L1 and initial near3 temperature	0
☐	L5	L1 and initial temperature	0
☐	L4	L1 and temperature	1
☐	L3	L1 and outlet temperature	0
☐	L2	L1 and inlet temperature	0
☐	L1	6673270.pn.	1

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☐ 1. Document ID: US 20070105962 A1

L8: Entry 1 of 9 File: PGPB May 10, 2007

PGPUB-DOCUMENT-NUMBER: 20070105962
PGPUB-FILING-TYPE:
DOCUMENT-IDENTIFIER: US 20070105962 A1

TITLE: Catalytic partial oxidation process for producing synthesis gas

PUBLICATION-DATE: May 10, 2007

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Basini; Luca	Milano		IT
Bartolini; Andrea	Milano		IT
Lupi; Giancarlo	Cremona		IT
Clerici; Gabriele Carlo Ettore	Milano		IT

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	COUNTRY	TYPE CODE
ENI S.p.A.	Rome		IT	03
Enitecnologie S.p.A.	San Donato Milanese		IT	03

APPL-NO: 10/571538 [PALM]
DATE FILED: September 9, 2004

FOREIGN-APPL-PRIORITY-DATA:

COUNTRY	APPL-NO	DOC-ID	APPL-DATE
IT	MI2003A1739	2003IT-MI2003A1739	September 11, 2003

PCT-DATA:

DATE-FILED	APPL-NO	PUB-NO	PUB-DATE	371-DATE
Sep 9, 2004	PCT/EP04/10169			Jan 17, 2007

INT-CL-PUBLISHED:

TYPE	IPC	DATE	IPC-OLD
IPCP	C07C27/06	20060101	C07C027/06

INT-CL-CURRENT:

TYPE	IPC	DATE
CIPP	C07 C 27/06	20060101

US-CL-PUBLISHED: 518/702
US-CL-CURRENT: 518/702

ABSTRACT:

Partial oxidation process of liquid fuels, selected from hydrocarbon and/or oxygenated compounds, together with gaseous fuels, selected from hydrocarbon compounds, natural gas and LPG, by means of a suitable catalytic system comprising the following steps: premixing the reagents and possibly heating them to temperatures ranging from 25 to 400.degree. C., said reagents consisting of said liquid fuels, said gaseous fuels and oxygen or air or oxygen enriched air, optionally in the presence of vapour and/or CO.sub.2; reacting the mixture of reagents in the catalytic zone, at inlet temperatures ranging from 50 to 500.degree. C. and space velocities ranging from 1,000 to 1,000,000 Nl reagents/L cat.times.h, reaching temperatures ranging from 450 to 1350.degree. C.

☐ 2. Document ID: US 20040102530 A1

L8: Entry 2 of 9 File: PGPB May 27, 2004

PGPUB-DOCUMENT-NUMBER: 20040102530
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20040102530 A1

TITLE: Multistage compact fischer-tropsch reactor

PUBLICATION-DATE: May 27, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Borsa, Alessandro G.	Evergreen	CO	US
Vanderborgh, Nicholas E.	Boulder	CO	US

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	COUNTRY	TYPE CODE
Blue Star Sustainable Technologies Corporation	Arvada	CO	US	02

APPL-NO: 10/302478 [PALM]
DATE FILED: November 22, 2002

INT-CL-PUBLISHED: [07] C07C 27/06, B01J 8/04

INT-CL-CURRENT:

TYPE	IPC	DATE
CIPN	B01 J 23/89	20060101
CIPS	B01 J 8/02	20060101
CIPS	B01 J 8/06	20060101
CIPS	C10 G 2/00	20060101

US-CL-PUBLISHED: 518/704; 422/191
US-CL-CURRENT: 518/704; 422/191

REPRESENTATIVE-FIGURES: 1

ABSTRACT:

A multistage compact packed-bed Fischer-Tropsch reactor comprises a plurality of first-stage reaction tubes and a plurality of second-stage reaction tubes in a reaction-heat-exchange chamber of a reactor vessel. The interior space of each of the reaction tubes contains a packed bed of catalyst. The reactor vessel contains an interstage fluid process chamber and a heat exchanger for condensing hydrocarbon products and water. After passing through catalyst in the first-stage reaction tubes, a process gas stream is cooled by a heat exchanger within the reactor vessel to condense hydrocarbon products and water. The liquid hydrocarbons and water are removed from the reactor vessel. The product gas stream then enters the second-stage tubes in which it is preheated by transfer of heat from the first-stage reaction tubes. The reactor comprises an exit-fluid process chamber within the reactor vessel. After passing through the catalyst in the second-stage reaction tubes, the process gas stream is cooled by a second heat exchanger within the reactor vessel to condense hydrocarbon products and water out of the process gas stream. In the exit-fluid process chamber, liquid hydrocarbons and water are separated from the process gas stream.

☐ 3. Document ID: US 20030162847 A1

L8: Entry 3 of 9 File: PGPB Aug 28, 2003

PGPUB-DOCUMENT-NUMBER: 20030162847
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030162847 A1

TITLE: Apparatus for producing high molecular weight liquid hydrocarbons from methane and/or natural gas

PUBLICATION-DATE: August 28, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Harford, Steven Thomas	Superior	CO	US
Borsa, Alessandro Giorgio	Evergreen	CO	US
Vanderborgh, Nicholas Ernest	Boulder	CO	US

APPL-NO: 10/251380 [PALM]
DATE FILED: September 20, 2002

RELATED-US-APPL-DATA:
child 10251380 A1 20020920
parent division-of 10083176 20020226 US PENDING

INT-CL-PUBLISHED: [07] B01J 8/02, C07C 27/06

INT-CL-CURRENT:

TYPE	IPC	DATE
CIPP	C10 G 2/00	20060101

US-CL-PUBLISHED: 518/703; 422/198, 422/211, 422/190
US-CL-CURRENT: 518/703; 422/190, 422/198, 422/211

REPRESENTATIVE-FIGURES: NONE

ABSTRACT:

A mixture of natural gas and air is converted to a C.sub.5-C.sub.19 diesel fuel-grade liquid hydrocarbon. The natural gas and air mixture is supplied to the input of a catalytic partial oxidation reactor. The carbon-containing gas output of the catalytic partial oxidation reactor is connected as an input to a first Fischer-Tropsch reactor, to thereby form a first diesel fuel grade C.sub.5-C.sub.19 liquid hydrocarbon output. A carbon-containing gas output of the first Fischer-Tropsch reactor is connected to the input of a second Fischer-Tropsch reactor, to thereby form a second diesel fuel grade C.sub.5-C.sub.19 liquid hydrocarbon output. The catalytic partial oxidation reactor contains a platinum group catalyst, a promoted platinum group catalyst, a rhodium catalyst, or a platinum promoted rhodium catalyst. Each of the Fischer-Tropsch reactors contain a catalyst that is made up of from about 3 to about 60 parts-by-weight cobalt and from about 0.1 to about 100 parts-by-weight of at least one metal selected from a group consisting of cerium, lanthanum and ruthenium per 100 parts-by-weight of a support selected from a group consisting of silica, alumina and combinations of silica and alumina, and more preferably a catalyst that is made up of about 20 percent by weight cobalt, about 0.1 percent by weight ruthenium, about 0.1 percent by weight platinum, the remainder being an alumina support.

☐ 4. Document ID: US 7001574 B2

L8: Entry 4 of 9 File: USPT Feb 21, 2006

US-PAT-NO: 7001574
DOCUMENT-IDENTIFIER: US 7001574 B2
**** See image for Certificate of Correction ****

TITLE: Apparatus for producing high molecular weight liquid hydrocarbons from methane and/or natural gas

DATE-ISSUED: February 21, 2006

PRIOR-PUBLICATION:

DOC-ID	DATE
US 20030162847 A1	August 28, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Harford; Steven Thomas	Superior	CO		US
Borsa; Alessandro Giorgio	Evergreen	CO		US
Vanderborgh; Nicholas Ernest	Boulder	CO		US

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Pangea Resourcces Incorporated	Freeport	NY		US	02

APPL-NO: 10/251380 [PALM]
DATE FILED: September 20, 2002

RELATED-US-APPL-DATA:
division parent-doc US 10083176 00 20020226 US 6593377 A child-doc US 10251380

INT-CL-ISSUED:

TYPE	IPC	DATE	IPC-OLD
IPCP	B01J8/02	20060101	B01J008/02
IPCS	C10L1/18	20060101	C10L001/18

INT-CL-CURRENT:

TYPE	IPC	DATE
CIPP	B01 J 8/02	20060101
CIPS	C10 L 1/18	20060101

US-CL-ISSUED: 422/177; 422/190, 422/211, 422/213
US-CL-CURRENT: 422/177; 422/190, 422/211, 422/213

FIELD-OF-CLASSIFICATION-SEARCH: 422/177, 422/190, 422/211, 422/213
See application file for complete search history.

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
4440628	April 1984	Winter et al.	208/65
4568663	February 1986	Mauldin	502/325
5221465	June 1993	Baird et al.	208/139
5620670	April 1997	Benham et al.	422/213
5856585	January 1999	Sanfilippo et al.	568/470
5883138	March 1999	Hershkowitz et al.	518/703
6169120	January 2001	Beer	518/715
6534552	March 2003	Benham et al.	518/715
6602921	August 2003	Manzer et al.	518/715
2002/0028853	March 2002	Manzer et al.	518/713
2002/0120017	August 2002	Bohn et al.	518/703
2004/0242707	December 2004	De Graaf et al.	518/702

OTHER PUBLICATIONS

Linda A. Bruce, Manh Hoang, Anthony E. Hughes and Terence W. Turney, "Ruthenium Promotion of Fischer-Tropsch Synthesis Over Coprecipitated Cobalt/Ceria Catalysts", 1993, pp. 51-67. cited by other

ART-UNIT: 1764

PRIMARY-EXAMINER: Bhat; N.

ATTY-AGENT-FIRM: Holland & Hart LLP Sirr, Esq.; Francis A.

ABSTRACT:

A mixture of natural gas and air is converted to a C.sub.5 C.sub.19 diesel fuel-grade liquid hydrocarbon. The natural gas and air mixture is supplied to the input of a catalytic partial oxidation reactor. The carbon-containing gas output of the catalytic partial oxidation reactor is connected as an input to a first Fischer-Tropsch reactor, to thereby form a first diesel fuel grade C.sub.5 C.sub.19 liquid hydrocarbon output. A carbon-containing gas output of the first Fischer-Tropsch reactor is connected to the input of a second Fischer-Tropsch reactor, to thereby form a second diesel fuel grade C.sub.5 C.sub.19 liquid hydrocarbon output. The catalytic partial oxidation reactor contains a platinum group catalyst, a promoted platinum group catalyst, a rhodium catalyst, or a platinum promoted rhodium catalyst. Each of the Fischer-Tropsch reactors contain a catalyst that is made up of from about 3 to about 60 parts-by-weight cobalt and from about 0.1 to about 100 parts-by-weight of at least one metal selected from a group consisting of cerium, lanthanum and ruthenium per 100 parts-by-weight of a support selected from a group consisting of silica, alumina and combinations of silica and alumina, and more preferably a catalyst that is made up of about 20 percent by weight cobalt, about 0.1 percent by weight ruthenium, about 0.1 percent by weight platinum, the remainder being an alumina support.

19 Claims, 1 Drawing figures

☐ 5. Document ID: US 6593377 B1

L8: Entry 5 of 9 File: USPT Jul 15, 2003

US-PAT-NO: 6593377
DOCUMENT-IDENTIFIER: US 6593377 B1

TITLE: Method and apparatus for producing high molecular weight liquid hydrocarbons from methane and/or natural gas

DATE-ISSUED: July 15, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Harford; Steven Thomas	Superior	CO		
Borsa; Alessandro Giorgio	Evergreen	CO		

Vanderborgh; Nicholas Ernest Boulder CO

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Blue Star Sustainable Technologies Corporation	Arvada	CO			02

APPL-NO: 10/083176 [PALM]
DATE FILED: February 26, 2002

INT-CL-ISSUED: [07] C07C 27/00

INT-CL-CURRENT:

TYPE	IPC	DATE
CIPP	C10 G 2/00	20060101

US-CL-ISSUED: 518/706; 518/702, 518/703, 518/715
US-CL-CURRENT: 518/706; 518/702, 518/703, 518/715

FIELD-OF-CLASSIFICATION-SEARCH: 518/706, 518/702, 518/703, 518/715
See application file for complete search history.

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
4568663	February 1986	Mauldin	
5620670	April 1997	Benham et al.	
5856585	January 1999	Sanfilippo et al.	568/470
5883138	March 1999	Hershkowitz et al.	
6169120	January 2001	Beer	518/715
2002/0028853	April 2002	Manzer et al.	518/713

OTHER PUBLICATIONS

Linda A. Bruce et al, Ruthenium promotion of Fischer-Tropsch synthesis over coprecipitated cobalt/ceria catalyst, Applied Catalysis A: General, 100 (1993) 51-67.

ART-UNIT: 1621

PRIMARY-EXAMINER: Parsa; J.

ATTY-AGENT-FIRM: Holland & Hart LLP Sirr, Esq.; Francis A.

ABSTRACT:

A mixture of natural gas and air is converted to a C.sub.5 -C.sub.19 diesel fuel-grade liquid hydrocarbon. The natural gas and air mixture is supplied to the input

of a catalytic partial oxidation reactor. The carbon-containing gas output of the catalytic partial oxidation reactor is connected as an input to a first Fischer-Tropsch reactor, to thereby form a first diesel fuel grade C.sub.5 -C.sub.19 liquid hydrocarbon output. A carbon-containing gas output of the first Fischer-Tropsch reactor is connected to the input of a second Fischer-Tropsch reactor, to thereby form a second diesel fuel grade C.sub.5 -C.sub.19 liquid hydrocarbon output. The catalytic partial oxidation reactor contains a platinum group catalyst, a promoted platinum group catalyst, a rhodium catalyst, or a platinum promoted rhodium catalyst. Each of the Fischer-Tropsch reactors contain a catalyst that is made up of from about 3 to about 60 parts-by-weight cobalt and from about 0.1 to about 100 parts-by-weight of at least one metal selected from a group consisting of cerium, lanthanum and ruthenium per 100 parts-by-weight of a support selected from a group consisting of silica, alumina and combinations of silica and alumina, and more preferably a catalyst that is made up of about 20 percent by weight cobalt, about 0.1 percent by weight ruthenium, about 0.1 percent by weight platinum, the remainder being an alumina support.

4 Claims, 1 Drawing figures

☐ 6. Document ID: US 6344491 B1

L8: Entry 6 of 9 File: USPT Feb 5, 2002

US-PAT-NO: 6344491
DOCUMENT-IDENTIFIER: US 6344491 B1

TITLE: Method for operating a fischer-tropsch process using a high pressure autothermal reactor as the pressure source for the process

DATE-ISSUED: February 5, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Beer; Gary L.	Plano	TX		
Briscoe; Michael D.	McKinney	TX		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Syntroleum Corporation	Tulsa	OK			02

APPL-NO: 09/397166 [PALM]
DATE FILED: September 16, 1999

INT-CL-ISSUED: [07] C07C 27/00

INT-CL-CURRENT:

TYPE	IPC	DATE
CIPS	C10 G 2/00	20060101
CIPS	C01 B 3/38	20060101
CIPS	C01 B 3/00	20060101

US-CL-ISSUED: 518/715; 518/702, 518/703, 518/700
US-CL-CURRENT: 518/715; 518/700, 518/702, 518/703

FIELD-OF-CLASSIFICATION-SEARCH: 518/715, 518/702, 518/703, 518/700
See application file for complete search history.

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
5023276	June 1991	Yarrington et al.	514/703
5028634	July 1991	Fiato	518/707

OTHER PUBLICATIONS

Hansen et al, High pressure autothermal reforming, Stud. Surf. Sci. Catal. (1998), 119, 875-882.*
"Production of Diesel Oil and Wax by Fischer-Tropsch-Synthesis using a Nitrogen-Rich Synthesis Gas--Investigations on a Semi-Technical Scale," by A. Jess, R. Popp and K. Hedden, 113, Jahrgang, Heft 12, Dec. 1997.
"Kinetics of the Fischer-Tropsch-Synthesis using A Nitrogen-Rich Synthesis Gas," by T. Kuntze, K. Hedden and A. Jess, OIL GAS--European Magazine Jan. 1995.
"Production of Synthesis Gas by Catalytic Partial Oxidation of Methane with Air," by A. Jess and K. Hedden, OIL GAS--European Magazine 20, Mar. 1994.
"A New Concept for the Production of Liquid Hydrocarbons from Natural Gas in Remote Areas," by K. Hedden, A. Jess and T. Kuntze, OIL GAS--European Magazine Mar. 1994.
"Synthesis Gas Production Via Catalytic Partial Oxidation of Methane with Air" presented Jun. 29, 1991, by Andreas Jess.

ART-UNIT: 1621

PRIMARY-EXAMINER: Richter; Johann

ASSISTANT-EXAMINER: Parsa; J.

ATTY-AGENT-FIRM: Baker Botts L.L.P.

ABSTRACT:

A method for producing a synthesis gas from a light hydrocarbon stream using air or oxygen-enriched air as an oxidant in a high pressure autothermal reactor and converting the synthesis gas in a Fischer-Tropsch process using a supported cobalt catalyst to produce heavy paraffins wherein the required process pressure is supplied by charging the reactant streams to the autothermal reactor at a high pressure.

4 Claims, 1 Drawing figures

☐ 7. Document ID: US 4483691 A

L8: Entry 7 of 9 File: USPT Nov 20, 1984

US-PAT-NO: 4483691
DOCUMENT-IDENTIFIER: US 4483691 A

TITLE: Production of synthetic natural gas from coal gasification liquid by-products

DATE-ISSUED: November 20, 1984

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
McShea, III; William T.	Martinsville	NJ		
Yarrington; Robert M.	Westfield	NJ		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Engelhard Corporation	Iselin	NJ			02

APPL-NO: 06/579842 [PALM]
DATE FILED: February 13, 1984

PARENT-CASE:
This is a continuation of application Ser. No. 430,200 filed Sept. 30, 1982, now abandoned.

INT-CL-ISSUED: [03] C10J 3/16, C10K 3/02, C01B 3/40

INT-CL-CURRENT:

TYPE	IPC	DATE
CIPS	C01 B 3/00	20060101
CIPS	C01 B 3/38	20060101

US-CL-ISSUED: 48/202; 48/197R, 48/214A, 48/215, 252/373
US-CL-CURRENT: 48/202; 252/373, 48/197R, 48/214A, 48/215

FIELD-OF-CLASSIFICATION-SEARCH: 48/214A, 48/215, 48/206, 48/202, 48/197R, 252/373, 502/326
See application file for complete search history.

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
3948762	April 1976	Hayes	48/214A
3964882	June 1976	Staudinger	48/215
4134860	January 1979	Hindin et al.	502/326

4199327	April 1980	Hempill et al.	48/202
4297245	October 1981	Bartley et al.	502/326

FOREIGN PATENT DOCUMENTS

FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	CLASS
1129134	May 1962	DE	48/214A
2303904	August 1973	DE	48/214A

ART-UNIT: 133

PRIMARY-EXAMINER: Bashore; S. Leon

ASSISTANT-EXAMINER: Hastings; K. M.

ABSTRACT:

In coal gasification processes for the production of synthetic natural gas by the reaction of coal with steam and oxygen under pressure to form a gasifier synthesis gas and a liquid hydrocarbon by-product, the liquid hydrocarbon by-product is treated for solids and metal removal and is then passed to a catalytic partial oxidation zone containing a monolithic platinum-palladium catalyst. The hydrocarbon by-product liquids are converted to secondary synthesis gas by being reacted with steam and oxygen. Optionally, the effluent from the catalytic partial oxidation zone may be passed through a second, steam reforming catalyst to react residual hydrocarbons with water to produce hydrogen and carbon oxides. The gasifier and secondary synthesis gases may be treated to remove acid gases therefrom and then methanated to provide a product synthetic natural gas.

31 Claims, 2 Drawing figures

☐ 8. Document ID: EP 112613 A2

L8: Entry 8 of 9 File: EPAB Jul 4, 1984

PUB-NO: EP000112613A2
DOCUMENT-IDENTIFIER: EP 112613 A2
TITLE: Process for producing hydrogen-rich gas from hydrocarbonaceous feeds.

PUBN-DATE: July 4, 1984

INVENTOR-INFORMATION:

NAME	COUNTRY
HECK, RONALD M	
MCSHEA, III WILLIAM T	
BUCHANAN, WILLIAM	
FLANAGAN, PAUL	

YARRINGTON, ROBERT M

US-CL-CURRENT: 48/214A
INT-CL (IPC): C01B 3/38
EUR-CL (EPC): B01J008/02; B01J008/02, B01J019/24 , C01B003/38

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw De

☐ 9. Document ID: MX 2005008871 A1, US 20060101715 A1, CA 2521982 A1, CN 1782037 A, AU 2005203534 A1

L8: Entry 9 of 9 File: DWPI May 1, 2006

DERWENT-ACC-NO: 2006-342465
DERWENT-WEEK: 200680

TITLE: Conversion of coal to substitute natural gas involves gasifying coal by gasifying agent and heat in gasification unit, recovering and converting primary raw gas to secondary raw synthesis gas by partial oxidation agent at preset condition

INVENTOR: VAN ZYL, F; VLOK, K ; ZYL, F V

PRIORITY-DATA: 2004US-0991293 (November 17, 2004)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
MX 2005008871 A1	May 1, 2006		000	C10J003/00
US 20060101715 A1	May 18, 2006		009	C10J003/00
CA 2521982 A1	May 17, 2006	E	000	C10J003/02
CN 1782037 A	June 7, 2006		000	C10K003/00
AU 2005203534 A1	June 1, 2006		000	C10J003/00

INT-CL (IPC): C10J 3/00; C10J 3/02; C10J 3/10; C10J 3/12; C10J 3/20; C10K 3/00

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw De

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Term	Documents
PARTIAL	1426719
PARTIALS	1144
LIQUID	3249522
LIQ	361270
LIQS	12873
LIQUIDS	456023

HYDROCARBON	680363
HYDROCARBONS	391099
GASEOUS	456692
GASEOU	1631
(CATALYTI$3 NEAR3 PARTIAL OXID$5 SAME LIQUID HYDROCARBON WITH (GASEOUS HYDROCARBONS OR NATURAL GAS OR LPG)).PGPB,USPT,USOC,EPAB,JPAB,DWPI.	9

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